

deration relates to the *composition* of the marl, and especially to the relative proportions of its three principal constituents, namely, carbonate of lime, alumine and silex. To ascertain this, recourse must be had to a chemical analysis. The proportion of calcareous particles is doubtless generally the most important fact to be determined; but it sometimes becomes equally important to ascertain the proportions of aluminous and silicious particles; for, one of the advantages, and not an inconsiderable one, in the application of marl is its use in ameliorating the mechanical condition of the soil, and these ingredients are eminently serviceable in this way.

From what has already been said, it will readily be perceived that great variety must also necessarily present itself in the chemical composition of the marl in its different localities. So far as experiments have been conducted it has been found that the proportion of calcareous particles varies from 20 to 60 per cent.; that of aluminous from 10 to 20 per cent.; that of silicious ingredients from 30 to 50 per cent.

It is doubtful whether any directions could be given which would enable those unpractised in chemical operations and manipulations to ascertain with any degree of accuracy the relative proportions of these constituents of the marl. This is a subject which must be submitted to some analytic chemist; and it is the duty of the Geologist to satisfy inquiries of that sort whenever called upon for that purpose. On the proposed geological map of the state, it is contemplated to express the composition of the marl in the principal localities that will be laid down; and by extending the table exhibiting the chemical analyses of these marls, to all such as can be conveniently procured, a mass of information will be collected that will in some measure supersede the necessity of any further experiments.

#### SECT. IV. *Mode of extracting the Marl—its use and its application.*

The first use of marl on the Eastern Shore of Maryland, was made about thirty years ago, by the Rev. Mr. Singleton, a gentleman whose name should ever be remembered by the people of Talbot county. The great improvement which he thus effected in the productiveness of the soil to which it was applied, soon became evident to those around. His example was, after awhile, imitated; so that, at this time there is scarcely an intelligent farmer having a supply of marl at his command, who is